

in favour of the former view. As regards people who are able to contemplate with admiration the world around them, the belief is expressed that "much of their appreciation of beauty or aversion to the ugly is obtained from the necessary physical laws governing all objects, although they themselves may be unconscious of the fact."

The additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus*) from India, presented by Mr. H. G. B. Whitehead; a Lesser White-nosed Monkey (*Cercopithecus petaurista*) from West Africa, presented by Mr. J. Hoatson; two Chinchillas (*Chinchilla lanigera*) from Chili, presented by Captain B. Dixon, R.A.; two Kinkajous (*Cercoleptes caudivolvulus*), two Cocoi Herons (*Ardea cocoi*), four American Jabirus (*Mycteria americana*), an Anaconda (*Eunectes murinus*) from Brazil, presented by Dr. E. A. Goeldi; a Common Squirrel (*Sciurus vulgaris*) British, presented by Miss Rice; two Graceful Ground Doves (*Geopelia cuneata*) from Australia, presented by Mrs. C. A. Thompson; a White Stork (*Ciconia alba*) European, presented by Mrs. A. Gregory; a Bennett's Tree Kangaroo (*Dendrolagus bennettianus*) from Queensland, presented by Mr. Winkley Smith; a Cocoi Heron (*Ardea cocoi*) from Brazil, presented by Mr. W. A. Churchill, H.B.M. Consul, Pará; two Coquerel's Mouse Lemurs (*Chirolagus coquereli*) from Madagascar, two Red-masked Conures (*Conurus rubrolarvatus*) from Ecuador, a Blue-winged Siva (*Siva cyanouroptera*) from India, deposited; two Graceful Ground Doves (*Geopelia cuneata*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

ROTATION PERIODS OF THE SUPERIOR PLANETS.—In the *Comptes rendus* of the Paris Academy of Sciences for July 28, M. Deslandres gives the results of his experiments in determining the rotation of superior planets by means of the spectroscopic method based on the Fizeau-Doppler principle.

The method, which was described in detail in *Comptes rendus*, vol. cxx. p. 417, depends upon the differential displacement of the opposite ends of the equatorial diameter, which causes this diameter to appear inclined to its normal direction, and thereby gives, instead of a circular image of the planet in the spectrum, an inclined ellipse, the axis of which is inclined more or less depending upon the speed of the planet's rotation; the relative direction of the major axis of the ellipse depends upon the direction of the planet's rotation.

M. Deslandres uses a spectroscope of moderate dispersion and a wide slit, and emphasises the fact that the entire light of the planet may thus be used, and still very useful, though less accurate, results may be obtained. He points out that one advantage of this method is that the apparent displacement is double the real displacement due to the rotary motion, for, of course, both ends of the diameter are equally displaced, therefore a high degree of accuracy may be obtained. Experimenting on the rotation of Jupiter, two forms of instrument were used, first a small spectroscope with a wide slit and then a 30° prism mounted in front of the object-glass of a telescope of om. '55 aperture. In each case three exposures were made, the first with the slit, or the edge of the prism, parallel to the equator of Jupiter, and the second and third after having turned the complete apparatus through 90° and 180° respectively; thus the displacement of the equatorial extremities was made evident on both sides of their normal position, thereby giving greater accuracy to the measurements, and in the case of Jupiter indicating for the linear equatorial velocity of 12 km. an equatorial velocity, according to the displacement, of 48 km. The results obtained show very good accordance, and M. Deslandres claims a greater degree of accuracy for this method than is obtainable by the ordinary method. During this year the method has been applied to the determination of the rotation of Uranus, and it has already been shown that the planet rotates in a retrograde direction, but the detailed results will be given in a later communication.

THE DUTCH ECLIPSE EXPEDITION OF 1901.—In a preliminary report published by the Eclipse Committee of the Royal Academy of Sciences, Amsterdam, Profs. Julius, Wilter-

dink and Nijland give an account of the proceedings of the expedition which was sent out to Sumatra, by the Dutch Academy, to observe the total solar eclipse of May, 1901.

Elaborate preparations were made. Government help in the matters of transport and manual labour was obtained, and a number of officers and men belonging to the Dutch ironclad *Sumatra* was told off to assist in making the observations.

The programme of the expedition was divided into four parts: (1) the coronagraphs, (2) the spectrographs, (3) the physical observations, and (4) the collection of amateur observations, and the results of the observations made in each section are treated separately in the report.

The coronagraph negatives were mostly spoiled by cloud-fog, only those obtained by short exposures and on slow plates giving good results. Using the 40-feet coronagraph, kindly lent by the U.S. Naval Observatory, and a "Lumière jaune" plate measuring 24 × 30 inches, some very fine prominences and details of the inner corona were obtained on the negative.

Of the five spectrographs used, only one gave results which are of any use, and in the negatives obtained Prof. Julius makes a special point of the doubling of all the chromospheric crescents, which he assigns to the phenomenon of anomalous dispersion of the chromospheric light, afterwards pointing out the improbability of the doubling being of instrumental origin.

In the physical observations the clouds interfered seriously, so that little weight may be attached to the heat-radiation observations, but in the observations of the polarisation of the coronal light it is shown that the light at some distance from the sun's limb is more strongly polarised than that which is near to that limb, whilst the polarisation decreases again as the distance from the limb is increased.

The results of the amateur observations are various; 39 drawings and 69 photographs of the corona have been secured, and 37 of the latter are described as "good," "very good," or "excellent." Reports on the observations of the shadow-bands were received from seventeen stations.

THE SATELLITES OF SATURN AND URANUS.—Dr. J. J. See gives the results of his observations of the satellites of Saturn and Uranus, made with the 26 inch refractor of the U.S. Naval Observatory, Washington, in No. 3806 of the *Astronomische Nachrichten*.

The "Clark Micrometer II.," with magnifying powers of 388 for the satellites of Saturn and 606 for those of Uranus, was used, and the observations are based on the method of relative measures adopted by Prof. H. Struve at Pulkowa. The micrometer is so constructed that in measuring the position of Japetus it can be directly referred to Titan by means of a sliding eyepiece, thus probably giving more correct results than by the usual method.

Dr. See points out that the statement in his paper on the satellites of Uranus, *A.N.* 3676, that the places given in the American ephemeris are 37" in advance of the observed places, is an error due to the ambiguous wording of the ephemeris.

AUSTRALIAN CHILDREN'S GAMES.¹

A certain amount of attention has been paid of late years to the subject of the games of primitive peoples, but so far we are only in the preliminary stage of the inquiry; indeed, a vast deal more evidence must be collected before sound generalisations can be made. A few suggestions have been thrown out by various students which must be regarded more as trial hypotheses than as definite conclusions, indeed they should be looked upon rather as "kites."

So few travellers think it worth their while to mention games and toys, especially those played by children, that the record for any country is imperfect, and for most peoples there is no information to hand. When there is any information it is nearly always simply a bare enumeration of the games played or of the toys employed; very rarely is a description given of the method of playing.

We are slowly learning the lesson that many of those activities which appear to be merely trivial have, or have had, an important significance in the evolution of human culture. The physiological, psychological and sociological aspects of playing have been dealt with by Karl Groos in his book "The Play of

¹ *North Queensland Ethnography: Bulletin No. 4*, March, 1902, "Games, Sports and Amusements." By Walter E. Roth, Home Secretary's Department, Brisbane, C.A. 8—1902.

Man," but it is not yet possible to map the distribution of most of the toys and games, to trace their origin, or to indicate the meaning that in many cases was primitively attached to their exercise.

Thanks to the investigations of Messrs. A. MacFarland Davis, F. Cushing, Stewart Culin, G. A. Dorsey and others, we have some indication concerning the variations, distribution and significance of the principal games of the North American Indians. Some hundred or so of these games are known, which can, however, be reduced to six main groups. These are derived from the employment of the shield and spear, marked arrows, shields on which were painted the four world quarters, and balls. Some of these games may have been originally merely games of skill, others were divinatory, while others, again, were doubtless magical.

In that vague region known as the Far East, the fragmentary evidence points to similar conclusions as the researches, amongst others, of Messrs. Stewart Culin, G. von Schlegel, R. Andree and E. B. Tylor. The same, too, appears to hold good for Oceania.

These general remarks will show how important it is that further evidence should be collected, and will indicate the welcome that will be given to the last of Dr. Walter E. Roth's studies in the ethnography of North Queensland. The following is Dr. Roth's classification of games, sports and amusements:—(1) Imaginative games, such as tales, of which nine are given. (2) Realistic games, playing with pets, playing with plants, making smoke spirals, bathing, &c. (3) Imitative games, objects and phenomena of nature imitated by attitudes, movements and paintings; the author figures seventy-four

a duck flying (Fig. 1), is similar to a string figure in Torres Straits which is called "throwing the fish spear," but this is a very simple figure to make. In this category are placed all those games in which children imitate their elders. Several round games are described in which "collecting honey,"



FIG. 2.

"catching cockatoos" and similar operations are represented; one of them, "playing bean tree" (Fig. 2), resembles a game I have described as played by Papuan children ("Head-Hunters, Black, White and Brown," 1901, chap. xv.). There are other analogies between the games of the aborigines of North Queensland and those of the Papuans. (4) Discriminative games, hide and seek and a guessing game. (5) Disputative games, wrestling, tug-of-war. (6) Propulsive games, ball games, tops, stick-throwing games, &c.; amongst the latter are certain methods of casting petioles of grass blades similar in principle to what is done by certain Papuan children. Of special interest is the hurling of a toy spear by means of a knotted string; a similar device was used by the men of the Southern New Hebrides, New Caledonia and the Loyalty Islands, and the present writer has recorded it as a child's plaything at Delena, Hall Sound, British New Guinea, and now it has turned up amongst the coastal blacks of North Queensland. (7) Exultative games, songs, dances, music. This little memoir, which is illustrated by thirty-nine plates, is full of valuable information, as it opens up a new field to the student.

A. C. H.

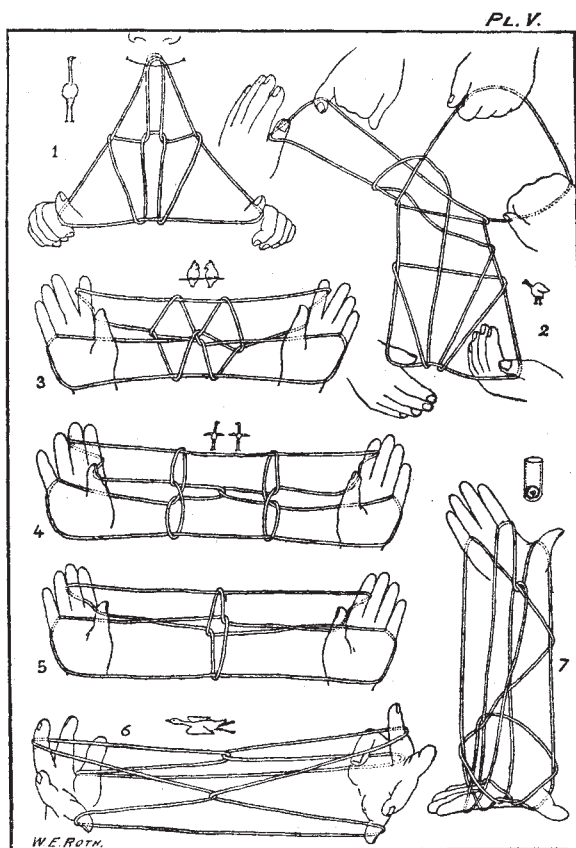


FIG. 1.

examples of those ingenious string figures in which so many primitive peoples excel. Very few illustrations of "cat's cradles" have ever been published, so that we cannot at present say how far particular devices are common to different peoples. One at all events (Plate v., Fig. 6), which represents

NO. 1711, VOL. 66]

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

SIR GEORGE G. STOKES, Bart., F.R.S., senior fellow and president of Pembroke College, Cambridge, has been elected master of the College, in succession to the late Dr. Searle.

DR. W. PALMER WYNNE, F.R.S., assistant professor of chemistry in the Royal College of Science, South Kensington, has been appointed to the chair of chemistry in the School of Pharmacy of the Pharmaceutical Society of Great Britain in succession to Dr. J. Norman Collie, F.R.S., who was recently appointed to the chair of organic chemistry in University College, London.

THE council of University College, Liverpool, has unanimously agreed to invite Dr. Benjamin Moore to accept the chair of biochemistry recently founded in University College by Mr. William Johnston. Dr. Moore is now lecturer on physiology in the Charing Cross Medical School, and has made himself widely known among men of science as a successful teacher and an original investigator.

MR. J. QUICK has been appointed principal of the Technical Institute, Limerick.

AFTER a discussion extending over several sittings, the seventh clause of the Education Bill has passed Committee of the House of Commons in an amended form. The clause refers to the management of elementary schools, and it raised the